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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

February 6, 2002

REPLY TO THE ATTENTION OF

(SR-6J)

Mr. Steven D. Smith
Solutia, Inc.
P.O. Box 66760
St. Louis, Missouri 63166-6760

EPA Region 5 Records Ctr.



165581

RE: Revised RI/FS Support Sampling Plan
Sauget Area 2 Site – St. Clair County, Illinois

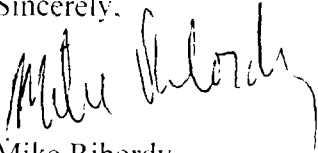
Dear Mr. Smith:

Within the next couple of weeks the United States Environmental Protection Agency (U.S. EPA) and the Illinois Environmental Protection will be meeting with you to: 1) resolve any outstanding issues resulting from the Sauget Area 2 Site Group's December 18, 2001, Response to Comments; and 2) to discuss the Site Q field data collected last year in order to finalize the sampling locations in the Support Sampling Plan. In order to streamline the discussions, U.S. EPA has completed its review of the Quality Assurance Project Plan (QAPP) and the Revised Draft Ecological Risk Assessment Work Plan. Attachment 1 contains U.S. EPA's approval memo and signature page for the Sauget Area 2 QAPP. Please complete the signature page and return the original signed version to me. Attachment 2 contains U.S. EPA's comment on the Draft Ecological Risk Assessment Work Plan.

U.S. EPA has also recently reviewed the Draft Support Sampling Plan (SSP) with respect to characterization of nonaqueous phase liquids (NAPL) within the landfills. NAPLs are present at the Sauget Area 1 sites, and due to similarities in disposal practices are likely to be encountered during the Sauget Area 2 remedial investigation. Currently, insufficient data will be collected to adequately characterize the nature and distribution of NAPL within the landfills. Attachment 3 contains U.S. EPA's comments and recommendations regarding NAPL issues. U.S. EPA would like to include these comments and suggestions in the agenda for the February meeting.

If you have any questions regarding this letter and the attachments, please feel free to call me at (312) 886-4592.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Ribordy". The signature is fluid and cursive, with the first name "Mike" and last name "Ribordy" clearly distinguishable.

Mike Ribordy
Remedial Project Manager
Superfund Division

cc: Thomas Martin, USEPA
Peter Barrett, CH2M HILL
Sandra Bron, IEPA

ATTACHMENT 1

MEMORANDUM

SMF-4J

DATE: January 28, 2002

SUBJECT: Approval of the First Revisions Quality Assurance Project Plan (QAPP) for the PRP-Lead Remedial Investigation/Feasibility Study (RI/FS) Support Sampling Plan (SSP) for Waste, Soil, Stormwater, Groundwater, and Air at the **Sauget Area 2 Sites** in Sauget, Illinois

FROM: Richard L Byvik
Field Services Section (FSS)

TO: Mike Ribordy
Remedial Project Manager (RPM)

I recommend approval of the first revision QAPP for the PRP-Lead RI/FS SSP for Waste, Soil, Stormwater, Groundwater, and Air at the **Sauget Area 2 Sites**, Sauget, Illinois. The Signature page was received by FSS on January 28, 2002, Login # 2787. The conditions for approval were accepted. The Signature page has been signed and returned to the RPM. Please send a copy of the completely signed Signature page to FSS.

CC: Steve Ostrodka

ATTACHMENT 2

Comment 1 - Jame's Chapman's comment on Section 12.7.7 addressed the application of seasonal use factor in estimating the exposure dose for an ecological receptor. The only outstanding issue is that the seasonal use factor for osprey may need adjustment depending on the duration of the toxicity study used to estimate effects, that is, if the exposure duration that results in adverse effects does not exceed the expected duration of seasonal use, it would be inappropriate to apply the SUF. In short, for each of the chemicals for which application of the SUF changes the conclusions regarding risk, a case should be made that use of the SUF was appropriate.

ATTACHMENT 3

January 22, 2002

MEMORANDUM

SUBJECT: Sauget Area 2 Superfund Site, Sauget, IL (02-R05-001)
RI/FS Support Sampling Plan/Field Sampling Plan

FROM: Steven D. Acree, Hydrogeologist
Technical Assistance and Technology Transfer Branch

TO: Mike Ribordy, RPM
U.S. EPA, Region 5

Per your request for technical assistance, the referenced document has been reviewed by Dr. Hai Shen, Mark Paddack, and Steve Yarbrough of Dynamac Corporation and me. Dynamac Corporation is an off-site contractor providing technical support services to this laboratory. As requested, the review focused on issues related to the adequacy of the proposed site characterization, particularly with respect to characterization of nonaqueous phase liquids (NAPL) within the landfills. In general, relatively few data regarding the nature and distribution of contaminant source materials within the landfills will be collected under this plan due to the limited number of borings and lack of focus on the physical phases (e.g., solid, aqueous, and NAPL) and properties of the contaminants. Such information will be required if source reduction efforts are contemplated. Depending on site conditions, source reduction activities, such as extraction of NAPL, may be beneficial to the long-term effectiveness of the remedy through reduction in the mobility of these contaminants regardless of whether restoration is attempted. This is particularly true if significant source removal from the middle and deep hydrogeologic units is undertaken. Detailed comments regarding these issues and other areas of concern are provided below.

1. The work plan does not indicate that the investigations will actively assess the presence, distribution, properties, or mobility of NAPL that may be encountered at these sites. This information is needed to adequately evaluate remedial options ranging from containment to source reduction/restoration. It is recommended that the scope of the investigation be expanded to include determination of the presence, extent, physical and chemical properties, and mobility of NAPL under current and future conditions both within the landfills and within the aquifer. This will allow an informed evaluation of the benefits and costs of various NAPL removal activities ranging from extraction using conventional pumping technologies to aggressive removal using chemical or thermal enhancements. Possible benefits of NAPL removal activities range from reduction in mobility of the NAPL to reduction in aqueous plume size and concentrations.

Techniques for determining or inferring the presence of NAPL during these investigations include direct observation of waste and aquifer materials, the examination of soil samples using soil/water separation tests and hydrophobic dye, continuous screening using organic vapor detectors, and, possibly, observations made under ultraviolet light. The presence of NAPL in soil samples may also be inferred through comparison of observed concentrations in soil and water samples with concentrations calculated from soil/water partitioning relationships. All wells installed during this investigation, as well as all existing wells, should be monitored for accumulations of NAPL using techniques such as interface probes and examination of samples discretely obtained from the top and bottom of the water column. The thickness of any NAPL accumulations in these wells should also be determined. These characterization methods are discussed in detail in the USEPA Fact Sheet entitled "DNAPL Site Characterization" (EPA/540/F-94/049) and the book entitled "DNAPL Site Evaluation" by R. Cohen and J. Mercer (CRC Press, 1993). If accumulations are observed, a representative number of samples should be obtained and analyzed for basic physical properties, such as density, viscosity, and interfacial tension, and gross chemical composition. These data will be useful in assessing the potential for further NAPL migration under current and future scenarios. Future conditions that may result in renewed or continued DNAPL migration include declines in ground-water elevations and institution of ground-water extraction in adjacent areas.

2. With the exception of Site Q, only four borings and one additional well, installed to a maximum depth of 40 ft, will be placed within the boundaries of each site. This will provide very limited information regarding the distribution, variability in properties, and potential mobility of source materials for ground-water contamination, particularly NAPL, that may be present. As noted above, it is suggested that assessment of the distribution and mobility of NAPL within and beneath the landfills be made one of the objectives of this investigation. It should be noted that DNAPL may be accumulating on various units within the upper, middle, and deep hydrogeologic units, as well as within the landfill. Some of this information may be available from previous investigations. However, additional borings/wells may be necessary to determine the extent of this contamination if NAPL is observed or inferred. These data may be obtained under the current work plan or in a phased approach following the initial borings, test pits, and well installations.

3. Installation of a single bedrock well at a location approximately downgradient from each site is currently proposed. This level of characterization will be insufficient to determine the existence, extent, properties, and potential mobility of any DNAPL that may be present near the bedrock interface or accumulated on other units within the aquifer. It is recommended that continuous sampling of aquifer materials, particularly near the bedrock interface, be performed to evaluate NAPL presence. It is also recommended that the wells be placed in areas downgradient of each site where DNAPL accumulations are most likely to be observed. Data concerning contaminant distribution in ground water and bedrock topography in the vicinity of the sites should be factored

into the placement of these wells. If current data are not sufficient to determine bedrock topography, it is suggested that the use of surface geophysical methods, such as refraction or reflection seismic surveys, be considered to provide more detailed information. If the presence of DNAPL is inferred or observed during these investigations, additional studies to determine the extent should be undertaken. This information may greatly affect the design and operation of remedial systems, including hydraulic containment systems, as well as evaluations of effective remedial options.

It is noted that investigations in these areas involve some risk of initiating additional DNAPL migration during drilling through geologic materials on which DNAPL has accumulated. Characterization activities that may potentially cause significant mobilization of DNAPL should be evaluated during their performance. For example, examination of soils, rock, and fluid samples obtained as drilling progresses should be made to identify DNAPL presence and potential barrier layers, and thereby, guide decisions regarding continued drilling, well construction, placement of additional wells, and/or borehole abandonment. This is particularly relevant in Area 2 as monitoring wells will be placed in or near the contamination source areas where DNAPL is likely to be present, and because dissolved contaminants migrating in the middle and deep hydrogeologic units may reach the Mississippi River in very short time frames.

4. As indicated in other documents, changes in river stage may greatly influence ground-water elevations and flow directions on a transient basis. It is not clear from these discussions that sufficient data have been obtained to determine the effects of these transient phenomena on potential remediation systems, particularly hydraulic containment systems. It is suggested that current data logger technology be used to better characterize the magnitude and duration of the impacts on ground-water flow over the next seasonal cycle. Current technology allows use of dedicated, miniature data loggers that are fully contained with each monitoring well for a relatively small capital investment. It is suggested that loggers be placed in a sufficient number of the proposed piezometers to determine daily fluctuations in hydraulic gradients across the area. These data may then be correlated with river stage data. If such a study has not been undertaken during previous investigations, it is recommended that it be performed under this plan. The information will be essential in estimating the effectiveness of hydraulic capture systems such as the one proposed as an interim action at Site R.

5. Seasonal changes in the ground-water levels and flow directions may significantly influence contaminant distribution and concentration. Understanding the seasonal variation of contaminant characteristics in ground water is also important to support the evaluation, design and operation of potential remedial options. In order to optimize the design and cost-effective operation of a plume capture system, information about the seasonal changes in contaminant distribution and concentration is required to determine parameters such as the locations of extraction wells, pumping rates and pattern, and treatment capacity. The current plan proposes a single round of sampling. If historical

data are not available, it is recommended that ground-water monitoring points at the top, middle, and bottom of the saturated zone at sites O, P, Q, R, and S be sampled quarterly for at least one year. All of the ground-water samples should be analyzed for VOCs, SVOCs, pesticides, herbicides, PCBs, metals, and the geochemical parameters that have been listed in the current plan.

If you have any questions concerning this review, please do not hesitate to call me at your convenience (580-436-8609). We look forward to future interactions with you concerning this and other sites.

cc: Rich Steimle (5102G)
Larry Zaragoza (5204G)
Luanne Vanderpool, Region 5
Doug Yeskis, Region 5